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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,116	12/06/2000	Shoichi Kyoya	9281.3846	9201

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EXAMINER

HARRINGTON, ALICIA M

ART UNIT	PAPER NUMBER
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2873

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/731,116

Applicant(s)

KYOYA, SHOICHI

Examiner

Alicia M Harrington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,3, 5, 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al (US 6,084,841) in view of Choi (US 5,995,473).

Regarding claim 1, Sugiura disclose an optical pick device comprising:

Two light emitting diodes (LD1 and LD2; see figure 1, col. 5, lines 1-5) on a common heat sink of a first and second wavelength having a mutually parallel optical axis;

A light receiving member (6);

A beam splitter (HM; see col. 5, lines 5-10 and 47-58) that admits each of the laser beams, delivers each of the laser beams toward an optical disk, and guides the return beam for the optical disks towards the light-receiving member;

The beam splitter is plate with a first interface (side A-B; see figure 1) and second interface (side C; see figure 1) and a material placed between the interfaces having a specific refractive index where the first interface reflects the first wavelength of light (LD1) and permeates the second wavelength (see col. 5, lines 47-58). The second interface reflects the second wavelength (LD2); and the first and second interface permeates the return beam. Therefore, each interface is

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inherently designed/formed of a material to selectively reflect at the interface or transmit through the plate;

Wherein the wavelength separating layer is formed such that the reflecting position of the first wavelength laser beam at the first interface and delivering/return position of the second wavelength laser beam at the first interface are at the same position (see figure 1, col. 5, lines 47-67 and col. 6, lines 1-67). And the optical axis of the return beams are coincident so that the wavelength-separating layer causes the return beam to permeate both interfaces moving towards the light receiving member. However, Sugiura fails to specifically disclose an embodiment where the first interface is totally parallel to the second interface in an optical pickup system.

In the same field of endeavor, Choi discloses an optical pickup system comprising a beam splitter with two interfaces (see figure 3; 220, 222) where multiple wavelengths (202) of light impinge upon the beam splitter and the first interface (222) reflects a first wavelength (see col. 3, lines 41-65) and transmits a second wavelength and the second interface (220) reflects a second wavelength. The system is designed such that the two interfaces are totally parallel and the return beam permeates both interfaces. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sugiura, to provide two interfaces in a beam splitter that reflect and/or selectively permeate different wavelengths of light where the interfaces are totally parallel, since it is taught by Choi's optical pickup system, and still provides for a compact optical system.

Regarding claim 3, Sugiura fails to specifically disclose the amount of beam that reflects or permeates the plate according the interfaces. However, the Examiner takes official notice that beam splitters are designed to provide various splitting and transition characteristics, and such is

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well known in the art. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the claimed reflectance and permeation percentages, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claim 5, Sugiura discloses a beam-splitter (HM) that is a plate where the light impinging upon the interface (for example: interface side C) causes the light to reflect or refract or transmit. For Example, the second light is reflected by interface C. And the return light is transmitted.

Regarding claim 6, Sugiura discloses the LED's are disposed in a single package (1), as illustrated in figure 1.

3. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiura et al. in view Choi, further in view of Uchiyama (US 6,163,409).

Regarding claim 7, Sugiura and Choi fail to specifically disclose an embodiment with a diffraction grating between the diodes and beam splitter. However, it is well known in the art, as taught by Uchiyama. Uchiyama discloses an embodiment with diffractive elements (12 or 22) for diffracting light (see col. 7, lines 21-25) between the laser diode and beam splitter. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sugiura and Choi, as taught by Uchiyama, since it is well known in the prior art of optical pickup systems using a dual light source.

Regarding claim 8, Sugiura discloses parallel light emitters, substantially parallel interfaces, and the light sources are parallel with a direction of the optical disk (see figure 1).

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Sugiura and Choi fail to specifically disclose how the light emitter and beams splitter are arranged in a carriage and the laser beams are incident on the surface of the beam splitter at 45 degrees. Uchiyama discloses where the light emitting member and beam splitter with parallel interfaces each fastened in a optical system separately and the beam splitter is disposed in such a manner that the incident angles of the laser beam on the beam splitter interface are virtually 45 degrees (see col. 11, lines 10-14). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sugiura and Choi, as taught by Uchiyama, to provide a optical head that can be miniaturized and operate reliably.

Response to Arguments

4. Applicant's arguments with respect to claims 1,3, 5-8 has been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M Harrington whose telephone number is 703 308 9295.

The examiner can normally be reached on Monday - Thursday 9:30-6:00.

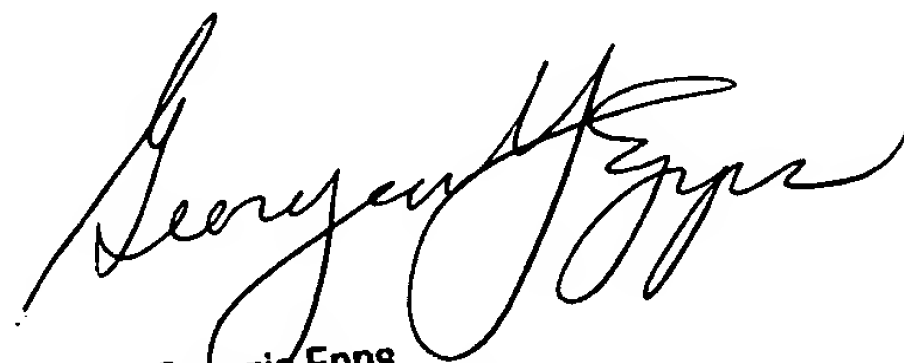
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 703 308 4883. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.



AMH

Alicia M Harrington
Examiner
Art Unit 2873



Georgia Epps
Supervisory Patent Examiner
Technology Center 2800